Date=21/07/2020
Lecture By=Shubham Joshi
Subject ⇒ Recursion

IN PREVIOUS LECTURE **(QUICK RECAP) Date-20/07/2020**	**In Today's Lecture (Overview)**
⇒ What Is Algorithm ⇒ What is swap In Python Sorting ⇒ What is sorting in python ⇒ How to use sorting in python Types of sorting in python 1.⇒ Selection Sorting 2.⇒ Bubble sorting 3.⇒ Insertion Sort ⇒ Questions For Self Practice	**⇒ Recursion In Python** **⇒ What is recursion** **⇒ What is stack** **⇒ Join In Python** **⇒ What is Factorial** **⇒ Questions For self Practice////CC for the Day**

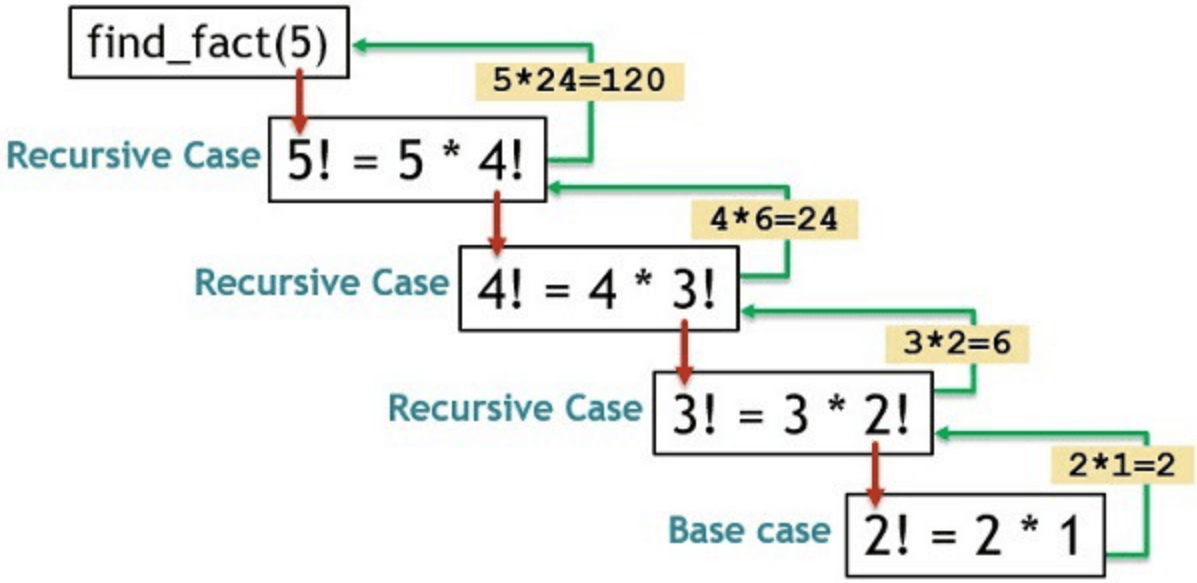
⇒ Recursion In Python

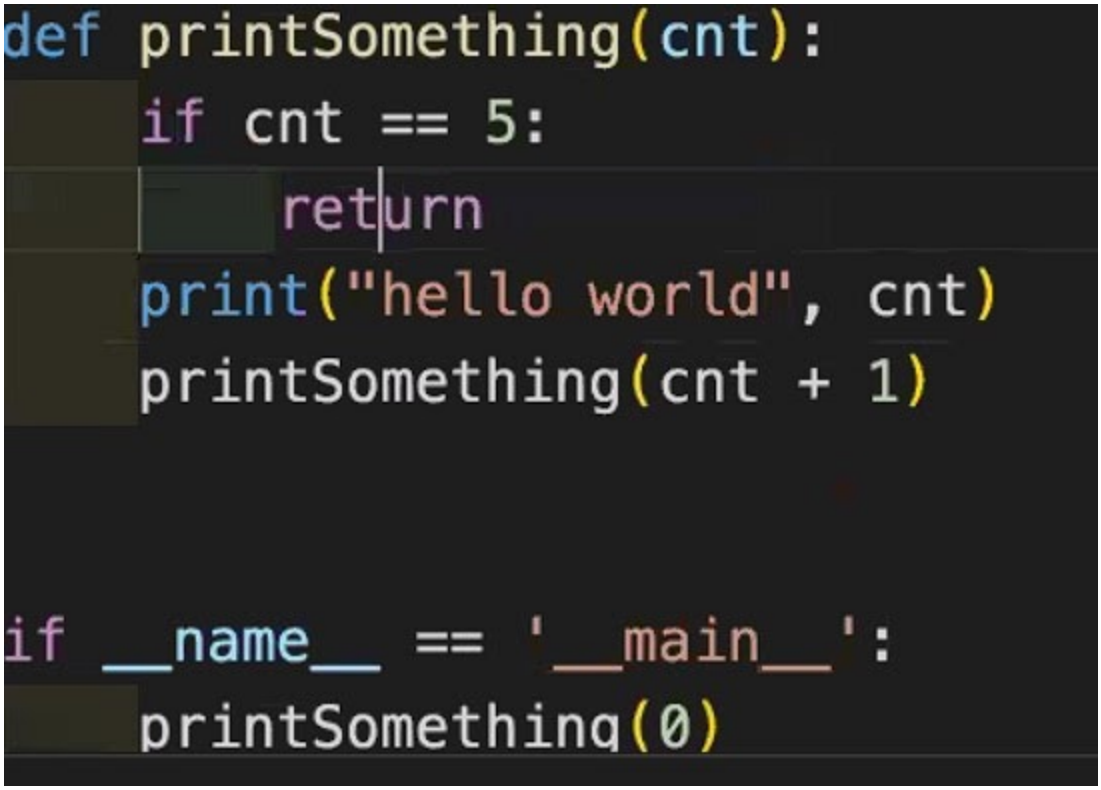
⇒ What is recursion

Definition
=**Recursion** is a common **mathematical and programming concept**. It means that a **function calls itself.**

=This has **the benefit of meaning that you can loop through data** to reach a result.\

In short:
-It Can create A function **That can call itself**





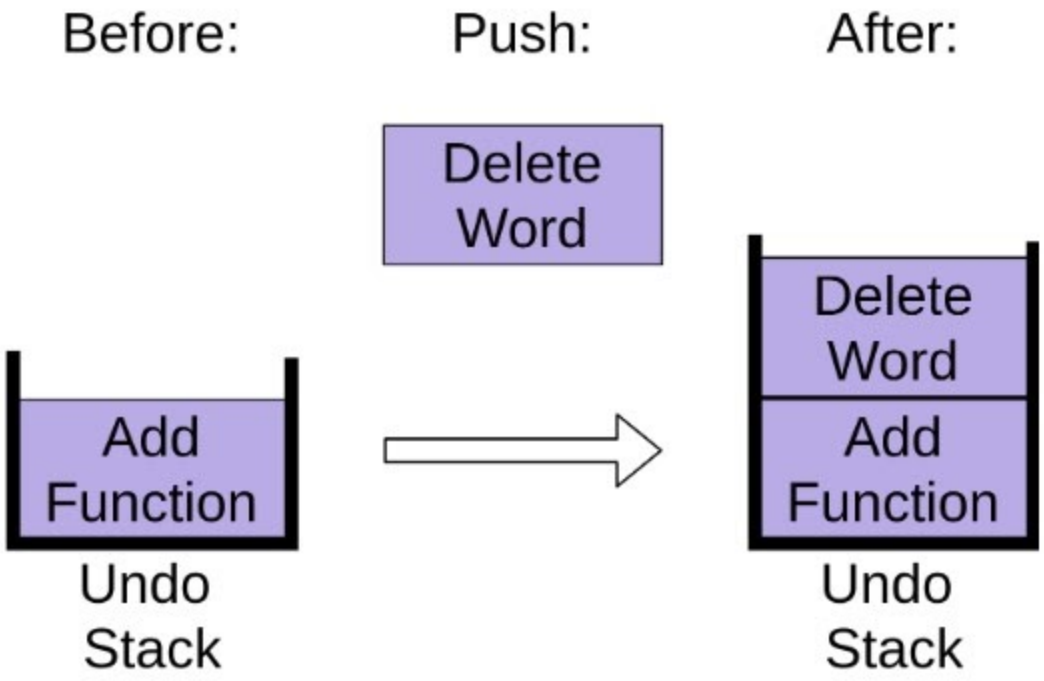
```
def printSomething(cnt):
    if cnt == 5:
        return
    print("hello world", cnt)
    printSomething(cnt + 1)


if __name__ == '__main__':
    printSomething(0)
```

⇒ What is stack

= **stack** is a **collection of objects that supports fast last-in, first-out (LIFO)** semantics for **inserts and deletes.**

=a new element is added **at one end and an element is removed from that end only**

“Click Here” To learn more about it



⇒ Join In Python

Definition
=**The join() method takes all items in an iterable and joins them into one string.**

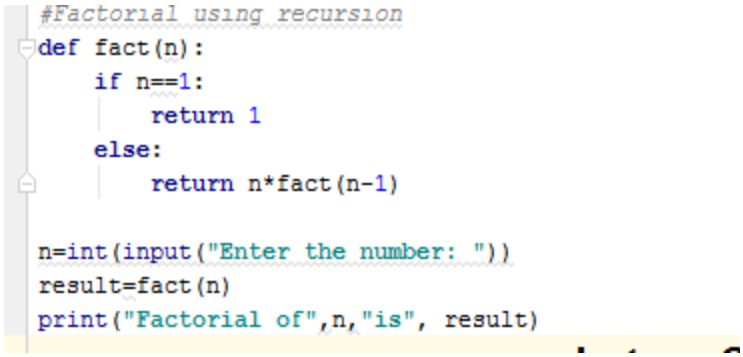
A string must be specified as the separator.

```
>>> demoList = ['1','2','3','4']
>>> delim = '@'
>>> new_list = delim.join(demoList)
>>> new_list
'1@2@3@4'
>>>
```

⇒ What is Factorial

=The factorial is always found **for a positive integer by multiplying all the integers starting from 1** till the given number.

= python offers a direct function **that can compute the factorial of a number without writing** the whole code for computing factorial.



```
#Factorial using recursion
def fact(n):
    if n==1:
        return 1
    else:
        return n*fact(n-1)

n=int(input("Enter the number: "))
result=fact(n)
print("Factorial of",n,"is", result)
```

"Click Here" To Know More About it

⇒ Questions For self Practice////CC for the Day

Question 1: Given a no n print the sum of numbers from 1 to n. Do it using recursion.
eg n = 5 sol = 1 + 2 + 3 + 4 + 5

Question 2: Reverse a string using recursion

Important note=
"In this lecture we learn basics of recursion And Nothing else,
the Topics were taught Are Covered In this Note"